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10/812,465

03/29/2004

John H. Irby IV

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EXAMINER

ROSSOSHEK, YELENA

ART UNIT

PAPER NUMBER

2825

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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3 MONTHS

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/812,465

Applicant(s)

IRBY ET AL.

Examiner

Helen Rossoshek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the Application 10/812,465 filed 03/29/2004 and amendment filed 01/05/2007.

2. Claims 1-26 are pending in the Application. Claims 23-26 have been added to the Application.

3. Applicant's arguments have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-11, 13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Su et al. (US Patent 6,948,619).

With respect to claim 1 Su et al. teaches a method comprising: determining a location of one or more regions on a reticle that come in contact with a reticle handling or support surface (within determining an arrangement of support pins 42 as shown on the Fig. 3 such as four of them, wherein support pins 42 for keeping the reticle support of a reticle 46 (Fig. 4a) from contacting a reticle metallic layer when supporting the reticle (col. 4, ll.26-33)); and generating a pattern to be written on the reticle (within creating reticle including a support of the reticle pod (col. 1, ll.7-10; 17-22)), the pattern

including one or more cut-out regions corresponding to the one or more regions that have been determined to come in contact with the reticle handling or support surface (within creating reticle with base free from the metallic coating (col. 4, ll.34-37) in the selected areas of the base surface that come into contact with support pins (col. 4, ll.34-37; col. 5, ll.60-64)); and adjusting the position, size or shape of one or more of the cut-out regions in the pattern to avoid conflict between the one or more cut-out regions and a required feature of the reticle (within selecting the chrome-free areas for special arrangement of their positions and locations (col. 6, ll.16-21)).

With respect to claim 11 Su et al. teaches a reticle comprising: a circuit pattern to be exposed on a wafer (within creating reticle including a support of the reticle pod (col. 1, ll.7-10; 17-22)); and one or more chrome cut-out regions positioned where a reticle handling or support apparatus has been determined to come in contact with the reticle, wherein the position, size or shape of one or more of the cut-out regions can be adjusted to avoid conflict between the one or more cut-out regions and a required feature of the reticle (within cutting out chrome in four areas 48, where support pins 42 are supposed to come into contact with reticle 44 shown on the Fig. 4a (col. 5, ll.60-64; col. 4, ll.34-37), and within selecting the chrome-free areas for special arrangement of their positions and locations (col. 6, ll.16-21)).

With respect to claims 2-10, 13, 15, 18 and 20 Su et al. teaches:

Claim 2: wherein determining a location of the one or more regions comprises determining a type of support surface used for the reticle (within the configuration of

support pins 42 (type of support surface), wherein the arrangement of the pins would match the arrangement of the chrome-free areas (col. 6, ll.16-21));

Claim 3: wherein determining a location of the one or more regions comprises determining a type of carrier used for the reticle (col. 4, ll.17-20; col. 1, ll.24-26; ll.59-61; col. 2, ll.17-21);

Claim 4: wherein determining a location of the one or more regions comprises determining a type of handling apparatus used for the reticle (within determination of the configuration of the handle 30 and support 34 as shown on the Fig. 2 (col. 5, ll.12-18));

Claim 5: wherein determining a location of the one or more regions comprises determining a type of storage apparatus used for the reticle (within determination of the configuration of the container (col. 5, ll.17-21; Fig. 2);

Claim 6: wherein determining a location of the one or more regions comprises determining a manufacturing process used with the reticle (within manufacturing process of the integrated circuit including processing reticle including forming pod elements with cutting-out chrome in selected areas by different methods of manufacture (col. 5, ll.33-37; 46-49));

Claim 7: wherein determining a location of the one or more regions comprises determining one or more required features to be written on the reticle (within selecting the area in the chrome layer for removing portion of chrome in the support area according to the arrangement of support pins (col. 4, ll.38-47));

Claim 8: further comprising determining a size of each cut-out region (within selecting the area in the chrome layer for removing portion of chrome in the support area according to the arrangement of support pins (col. 4, ll.38-47));

Claim 9: further comprising writing the pattern on a reticle blank (col. 5, ll.53-55);

Claim 10: further comprising developing and etching the pattern to remove reticle surface chrome from the regions that have been determined to come in contact with the reticle handling or support surface (col. 5, ll.59-64);

Claim 13: further comprising an alignment feature (col. 3, ll.44-60);

Claim 15: further comprising a reticle manufacturing structure (col. 5, ll.33-37; 46-49).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 12, 14, 16, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Su et al. in view of Babbs et al. (US Patent 6,848,876).

With respect to claims 12, 14 Su et al. teaches the limitations from which the claims depend, but lacks the specifics regarding barcode and pellicle shielding. However Babbs et al. teaches:

Claim 12: further comprising a barcode (col. 6, ll.64-67);

Claim 14: further comprising a pellicle to shield the reticle from particles (col. 1, ll.32037). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Babbs et al. to teach the specifics subject matter Su et al. does not teach, because the reticle management system is configured with different types of storing plurality of reticle including reticle inspection stations (col. 2, ll.65-67; col. 3, ll.1-3).

With respect to claim 16 Su et al. teaches a method comprising: writing a pattern on a blank reticle having a layer of photoresist and a layer of chrome, the pattern including one or more cut-out regions that have been determined to come in contact with a reticle handling or support apparatus, wherein the position, size or shape of one or more of the cut-out regions in the pattern can be adjusted to avoid conflict between the one or more cut-out regions and a required feature of the reticle (within creating reticle including a support of the reticle pod (col. 1, ll.7-10; 17-22; col. 5, ll.53-56), and within selecting the chrome-free areas for special arrangement of their positions and locations (col. 6, ll.16-21)); and etching away the chrome layer to remove chrome from the regions determined to come in contact with the reticle handling or support apparatus (within cutting out chrome in four areas 48, where support pins 42 are supposed to come into contact with reticle 44 shown on the Fig. 4a (col. 5, ll.60-64; col. 4, ll.34-37)). However Su et al. lacks specifics regarding photoresist layer. Babbs et al. teaches developing the pattern to remove the photoresist layer and reveal the chrome layer in the regions determined to come in contact with the reticle handling or support apparatus (within fabrication of the integrated circuit devices including forming pattern by

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lithography including photoresist which is applied on a chrome coated reticle blank, wherein after generating pattern in the photoresist, the exposed portions of the photoresist are removed to leave the unwanted portions of the chrome layer exposed (col. 1, ll.17-22; 25-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Babbs et al. to teach the specifics subject matter Su et al. does not teach, because the reticle management system is configured with different types of storing plurality of reticle including reticle inspection stations (col. 2, ll.65-67; col. 3, ll.1-3).

With respect to claims 21, 22 Babbs et al. teaches:

Claim 21: wherein writing a pattern on a blank reticle comprises writing a pattern on a blank reticle via an E-beam machine (col. 1, ll.22-25);

Claim 22: wherein writing a pattern on a blank reticle comprises writing a pattern on a blank reticle via a laser writer (col. 1, ll.22-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Babbs et al. to teach the specifics subject matter Su et al. does not teach, because the reticle management system is configured with different types of storing plurality of reticle including reticle inspection stations (col. 2, ll.65-67; col. 3, ll.1-3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Babbs et al. to teach the specifics subject matter Su et al. does not teach, because the reticle management system is configured with different types of storing plurality of reticle including reticle inspection stations (col. 2, ll.65-67; col. 3, ll.1-3).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Su et al. in view of Babbs et al. as applied to claim 16 above, and further in view of Montgomery et al. (US Patent 7,067,227).

With respect to claims 17-20 the combination of Su et al. and Babbs et al. teaches the limitation from which the claims depend. However the combination lacks specifics regarding positive and negative photoresist layer.

With respect to claims 17-20 Montgomery et al. teaches:

Claim 17: wherein the layer of photoresist is positive and developing the pattern comprises exposing and removing the photoresist layer from the written regions to reveal the chrome layer (col. 1, ll.44-59);

Claim 19: wherein the layer of photoresist is negative and developing the pattern comprises exposing and removing the photoresist layer from the unwritten regions to reveal the chrome layer (col. 1, ll.59-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Montgomery et al. to teach the specifics subject matter the combination of Su et al. and Babbs et al. does not teach, because it enables a reduction in the change in critical dimension over a reticle surface when both dense and isolated features are present (col. 4, ll.37-39).

With respect to claims 18 and 20 Su et al. teaches:

Claim 18: wherein etching away the chrome layer comprises etching away the chrome layer from the written regions to reveal a glass layer of the reticle (within selecting the chrome-free areas for special arrangement of their positions and locations (col. 6, ll.16-21));

Claim 20: wherein etching away the chrome layer comprises etching away the chrome layer from the unwritten regions to reveal a glass layer of the reticle (within selecting the chrome-free areas for special arrangement of their positions and locations (col. 6, ll.16-21)).

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Su et al. in view of Montgomery et al.

With respect to claims 23, 25 Su et al. teaches similar limitation to claim 1, but lacks specifics regarding removing the photoresist layer and reveal the chrome layer, wherein the layer of photoresist is positive (claim 23) (col. 1, ll.44-59); and wherein the layer of photoresist is negative (claim 25) (col. 1, ll.59-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Montgomery et al. to teach the specifics subject matter Su et al. does not teach,

because it enables a reduction in the change in critical dimension over a reticle surface when both dense and isolated features are present (col. 4, ll.37-39).

With respect to claims 24 and 26 Montgomery et al. teaches:

Claim 24: wherein etching away the chrome layer comprises etching away the chrome layer from the written regions to reveal a glass layer of the reticle (col. 1, ll.48-51);

Claim 26: wherein etching away the chrome layer comprises etching away the chrome layer from the unwritten regions to reveal a glass layer of the reticle (col. 1, ll.48-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Montgomery et al. to teach the specifics subject matter Su et al. does not teach, because it enables a reduction in the change in critical dimension over a reticle surface when both dense and isolated features are present (col. 4, ll.37-39).

Remarks

12. In remarks Applicant argues in substance:

a) Su cannot disclose, teach or suggest a combination including “adjusting the position, size or shape of one or more of the cut-out regions in the pattern to avoid conflict between the one or more cur-out regions and a required features of the reticle

9. Examiner respectfully disagrees for the following reasons:

As to a) Su et al. teaches adjusting the position, size or shape of one or more of the cur-out regions in the pattern to avoid conflict between the one or more cut-out regions and a required feature of the reticle (within selecting the chrome-free areas for

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special arrangement of their positions and locations (col. 6, ll.16-21)). Examiner maintains rejection of claims 1-26 under 35 USC § 102 and under 35 USC § 103 by Su et al., Babbs et al. and Montgomery et al. separately and as a combination thereof.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen Rossoshek whose telephone number is 571-272-1905. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

03/12/2007

PAUL DINH
PRIMARY EXAMINER



Helen Rossoshek
Examiner
Art Unit 2825

